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ADEQUATE REDUCTION AND CARE IN COLLES'S FRACTURE. NEW METHODS.

By Frederic J. Cotton, M.D., Boston.

No fracture is so common as Colles's fracture,—none so familiar. Why is it not better handled? I believe because an essential factor, one may almost say *the* essential factor, has been neglected, both in reduction and in treatment.

It has been my fortune of late years to have referred to me very many cases of unsatisfactory results in Colles's fracture, and in nearly every one the trouble has been failure to recognize and to handle this feature—the factor of *backward rocking* of the *distal fragment,* which, as long as it persists, makes proper reduction of the ulna impossible,—and it is a fact, even a well-recognized fact,—that it is the ulnar luxation, rather than the fracture itself, which gives disability.

I have called attention to this factor of backward rocking before, but perhaps without emphasis. Today I am emphasizing it because I now know how to handle it, and have a method to offer that has stood the test of half a dozen years of use in the hands of myself and my assistants.

When one breaks his wrist, it is the radius that gives way, but the whole damage may best be expressed as a *rotation backward of the hand about the ulnar head as a fixed point,* a rotation which tears the ulnar ligaments loose (the ulnar styloid often giving way with the ligament strain), and *also* breaks the radius. The hand is displaced, *with the radial fragment,* up and back *in toto,* to a varying degree —often great; but, whatever the *total displacement* of broken fragments, *always* we find the *hand* displaced *backward,*—always the associated *tilting backward* of the lower radial fragment.

We may have *a* or *b* of Fig. 1, but always a tilting back, an *altered angle, of the articular surface.* (See also Fig. 2).

After long observation of this fact, after considerable experience in trying to use the accepted manipulations so as to correct it, it finally occurred to me to reverse, in reducing, the mechanism of production of the deformity. In other words, *if the ulna is the fixed point* about which the hand is displaced, *make it the fixed point about which one reduces;* if the hand is displaced in extension, *reduce it in flexion;* if it is displaced in a rotation of supination about the ulnar head, *reduce in pronation.*

There is no finality in such a reasoning, but on trial this worked out surprisingly. The older methods of reduction aimed almost entirely at a carrying forward of the lower fragment on the upper. For this they were good, and I use them still—for this. The new matter is—after the obvious displacement of the radius is corrected, then carry the hand *about the ulnar head as a fixed point* into *pronation* and *flexion*. It is simple enough.

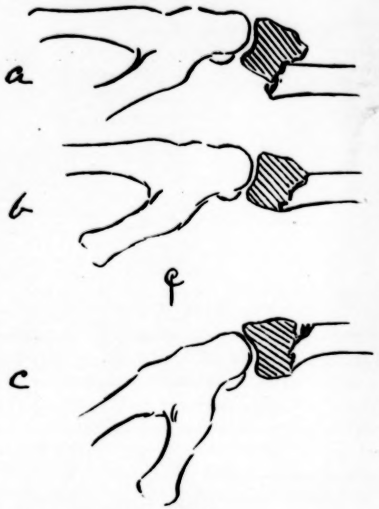

FIG. 1.

a. Displacement backward.
b. Rocking backward without total displacement.
c. Correction of *b*, showing gap left where bone was crushed by the "impaction."

Figure 3 shows the grips and the motion. A good deal of force is directed up under the ulnar head, a strong drag flexes the hand, and a *twist* of the whole hand *about the ulna* finishes the work. This may all be done as one twisting sweep—and easily,—rarely needing repetition.

Now as to retention: If one wishes first-rate results, the average splints are very often inefficient. The muscle-tonus holds the fragments against redisplacement *in toto*, but not against *rocking back* of the distal fragment, the more so as there is often enough crushed and missing bone at the back edge of the fracture to leave a gap. How to hold position I learned from doing osteotomies on old fracture deformities in which one must of necessity keep a wedge-shaped gap open until it fills with bone.

This can be done only in flexion, and flexion is best held in plaster, preferably applied as strip-splints of eight to ten layers of plaster-of-Paris bandage, one on the back, from elbow to finger knuckles, one in front, from upper forearm to palm. These are caught with a few turns of plaster-of-Paris bandage. (See Figs. 6 and 7.)

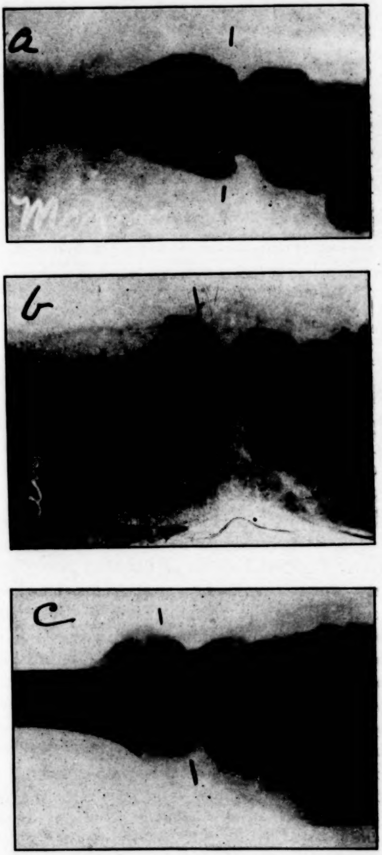

FIG. 2.

a. Normal slope of articular surface. (This picture is, in fact, from a case of Colles's fracture—from auto backfire—with marked displacement, reduced by the method herein described, just before taking this picture.)
b. Unreduced fracture. Note the different angle of the wrist joint surface. This fracture was later entirely and easily reduced.
c. Same tilting of joint surface in another case.

The same thing may be done less efficiently, but often well enough with splints and exag-

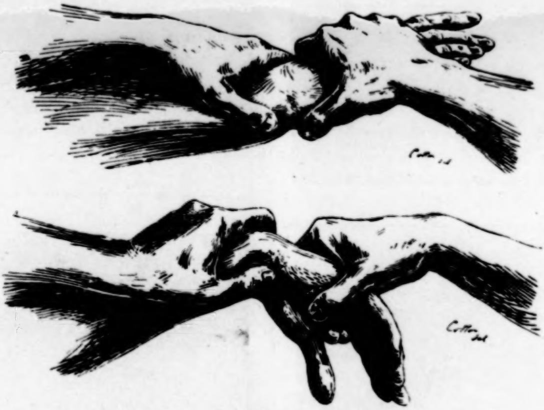

Fig. 3.
First traction and rocking, with the hand a little extended (backward) so as to free the displaced radial fragment and the dislocated ulna; then, with the thumb under the ulna, making it a fixed fulcrum, drag the hand down into flexion and pronation, keeping up traction combined with this flexion and rotation.

generated pads, as shown in Fig. 4. So long as the wrist is in flexion, the posterior ligaments always intact, give the pull that keeps the distal radial fragment from rocking backward; and so long as the ulna is held to the *back* of the flexed wrist, the ligaments can heal to something near their normal length. This is important, for not only is there weakness in the ligaments, but their laxity often permits a subluxation of the ulna with each supination,—a common factor of disability. This slipping ulna not very rarely leads to ulnar nerve irritation. I have previously called attention to it, but find it not uncommonly, ***always undiagnosed,*** whether slight or considerable in degree.

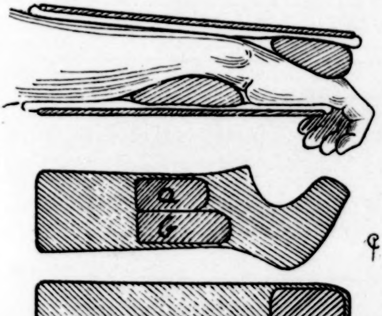

Fig. 4.

The flexion position need not be kept up over a fortnight, and it is usually wise, if plaster is used, to slit the plaster along one side after a day or two to ease the circulation. Always remember that the position a little impedes circulation, and watch carefully. In several cases reduced by internes, I have seen a dangerous interference with circulation from too tight a plaster. This is better avoided if one uses the strip-splints of plaster as described, but even that is no security against lack of skill or care. This chance of trouble is the reason I have not until now published this method of fixation, long as I have used it.

After the flexed position is abandoned, use straight splints with exaggerated pads at *a* and *b* (Fig. 4) for a third week—never longer, unless for special reasons,—and then a supporting strap of adhesive with a pad in front of the ulna (the ligaments are the last to heal) to be worn (changed every three to five days) until the hand is strong.

It has been my experience that the hand recovers function more quickly after flexed fixation than after straight splints—I do not know why.

It may not be out of place to consider in more detail the factors of real disability following Colles's fracture.

Firstly there are very many cases of real

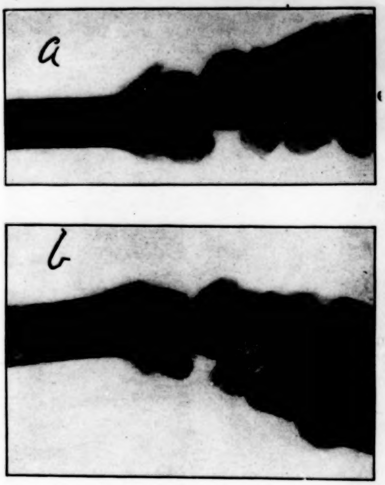

FIG. 5.

a. Before reduction.
b. After reduction. In this case splints were used, not plaster.

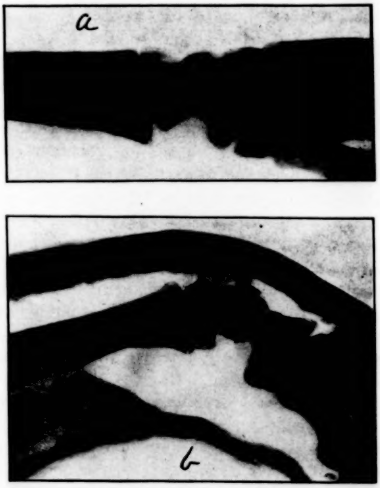

FIG. 6.

a. Epiphyseal separation in a boy of 15 years—after two attempted reductions (elsewhere).
b. After reduction through small open incision—reduction by leverage of osteotome between fragments—shown held in flexion plaster.

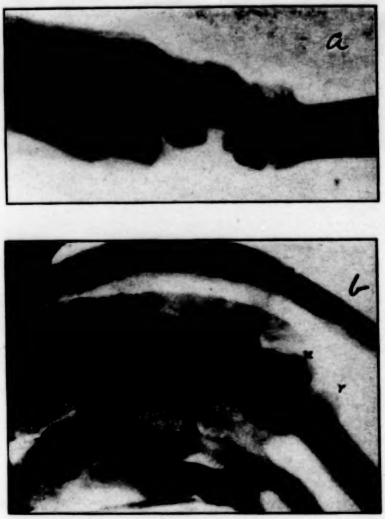

FIG. 7.

a. Colles's fracture 10 weeks old. Extreme displacement of radial fragment. Ulnar head locked in front of carpus. Entire loss of flexion of wrist and of supination. Finger flexion interfered with to unusual degree.
b. Same after open reduction—osteotomy, then reduction by the manipulations described in the text. Shown held in flexion plaster. Note the V-shaped gap between *x* and *y*, successfully held open.

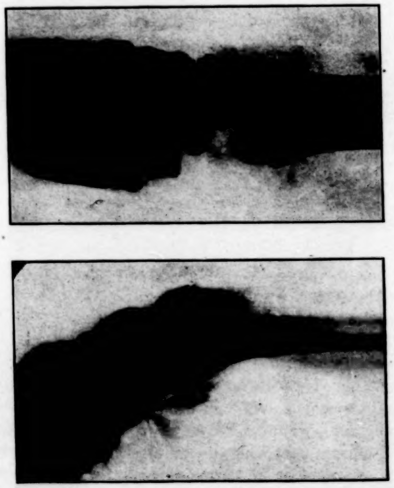

FIG. 8.

a. Three weeks after fracture and alleged reducton.
b. After reduction with "Thomas" wrench. Shown as held in flexion on splint. (*Cf.* Fig. 4.)

disability sufficient to interfere with special forms of work or special kinds of play.

It is not a fact,—though often so stated,—that the cases with deformity that are not set "do just as well." The only fact resembling this is that a neglected case often does better than one badly treated ("set" or unset) because, even today, commonly enough, splinting is too long continued, as in the older days it was always kept up too long. Overlong fixation inevitably leads to stiffness—often of the wrist and particularly of the fingers, hard to cure, easy to avoid.

Splinting of three weeks' duration is enough and, from the time of reduction, splints should never immobilize the fingers. Rarely there is delay of union—here one may have to fix for a longer time, but it must be fixation with massage and exercise or there will be trouble.

In an inescapable minority of cases, traumatic arthritis develops, not necessarily in arthritics or in people with discoverable focal infections, often "out of a clear sky." It is not a result of good or bad treatment. Usually the diagnosis is obvious—if not; the x-ray will confirm it—the picture of extreme osteoporosis with but trifling joint changes. No change in routine of treatment by splints is called for, but the recovery is very slow. Under prolonged treatment with heat, massage, and gentle motion, these cases usually recover, almost perfectly, but very slowly indeed.

Save for what has just been said, all the disabilities are mechanical.

Worst is the locking of the ulnar head in front against (or even anterior to) the pisiform, blocking flexion and rendering ulnar flexion and supination painful, almost impossible. It is rare. I have seen four cases of such locking (see Fig. 7). This lesion results from a combination of anterior luxation of the ulna with a shortened radius.

Anterior luxation of the ulna is far commoner—common—in some measure almost unusual, and is the commonest cause of trouble in these cases. When slight, it gives only a little weakness or clumsiness, not disabling, but enough to spoil one's game of tennis.

Of a little higher grade, it gives a weak and uncertain wrist. In such cases, a careful inspection shows not only the loss of prominence of the ulna at the back of the wrist which is so common (Dr. David Cheever used to teach us it was *always* present after Colles's fracture), but also a prominence anteriorly and a very distinct increase in both when the hand is thrown over into supination. This is a result of lax ligaments and of the radial deformity to which we shall come presently. In the worst cases, the condition is a veritable recurrent luxation of the ulna with each supination movement. The weakness and pain are very considerable. These, too, are the cases in which ulnar nerve damage, both sensory and motor, occasionally develops.

Fortunately, all these conditions may be remedied by osteotomy and correction even long after the injury, with results far better than one could expect. But they should never be allowed to develop.

Now as to trouble from the radius.

Almost never is any pain complained of at the site of fracture. In many cases tipping back with or without displacement back of the lower fragment gives an unhandy loss of flexion not compensated for by the abnormally free range of extension. More important is the weakness due to the posterior position of the carpus. Most important is the effect on the ulnar side.

Displacement of the hand toward the thumb side may be dismissed briefly. Save for the strain thrown on the ligaments of the ulnar side, it gives no trouble unless the shortening is tremendous, as sometimes occurs with extreme radial *shortening* or from loss of epiphyseal growth when the injury has been sustained in childhood.

As to the effect of radial deformity felt on the ulnar side, it comes to this. Never, so far, have I seen a case with displaced ulna in which the ulnar relation could be made normal until the radius was corrected both as to the site and the angle of the lower fragment, and this holds true whether the case is fresh or an old one only to be corrected by osteotomy. This is probably due to the fact that the radius and ulna down to the point of fracture are held in definite relation by the interosseous membrane, so that any backward displacement of the hand means a backward displacement with relation to the ulna—not correctible save by restoring the radius.

And it is just because the symptoms are mainly on the ulnar side, just to correct the symptoms of what we call ulnar luxation that we must exert more care in radial reductions.

Entanglement of the ulnar styloid in ligaments or radial nerve damage, etc., occur sometimes, but these are accidents, and rare.

The things above described are common, the way to avoid them is open, the trouble worth while.

Save for the cases of excessive fragmentation that one occasionally gets, especially in the aged, and the rather rare cases in which a traumatic arthritis interferes, there seems to be no reason for anything but good anatomical results or for any considerable permanent disability after Colles's fracture.

In the illustrations that accompany this article no attempt has been made to heap up examples, but rather to show the principles followed.

In a not inconsiderable experience through half a dozen years or more, I have carried out this routine without any trouble with regard to the rocking backward of the fragment, and have been able to get reductions that are nearly or quite perfect, both as to radius and ulna. It may be objected that I see a disproportionate number of bad end-results referred to me. This may be true, but I certainly see many bad ones, while I have found it possible to get consistent good results in fresh cases, and to reduce and hold those I do osteotomy on; until I adopted this method my results were uneven, often poor, and this change I believe to be not a matter of skill but of improved method.

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THE PATHOLOGY OF CONSCIENCE.

By Abraham Myerson, M.D., Boston,

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Amongst the types of the over-conscientious there are two especially interesting to the curious student of his kind. One of these will some day engross the life-long attention of a serious historian who will busy himself with the problem, to wit, whether men with principles or men without have done more harm in the world. This first type may be called *the over-conscientious whose peculiarity injures others.* These are the people who inaugurate inquisitions, persecute those differing from them in opinion and conduct, largely because such procedures are the offspring of the minds and wills of those who allow no question of human error to mitigate their feeling of being right and whose consciences goad them to consistent unrelenting action.

The second group, *those whose conscientiousness hurts themselves,* is represented in the two cases here reported. This type of person continually tortures himself by subjecting his actions and even his thoughts to the stern scrutiny of an over-zealous conscience; life to this class of the misguided has to be totally consistent; peccadillos and frailties are inconsistent and therefore intolerable, and they allow themselves no lapses from a rigid code. Or, rather, they are horrified by those lapses which conscience *cannot* prevent, and consequently they fall into an eternal mental battle waged over small matters. A train of symptoms in many cases results, which brings them to the attention of the neuropsychiatrist.

The first case concerns a young fellow. Out-Patient Psychopathic Department, Boston State Hospital, No. 9328, who was referred because of the great failure of his mental endurance that had taken place within a year. He complained of severe headaches, dizzy feelings, loss of capacity to study and a depressing pre-occupation with an apparently approaching breakdown. His personal history is interesting. He is a Southerner, of a poverty stricken family, and by dint of exceptional ability and extraordinary exertions has worked his way through High School, Harvard College, and into Harvard Law School. In order to pay his way, he has done tutoring and has taken practically no rest for years. In addition to caring for himself, he is providing for a younger brother, for his reputation as a tutor has reached such a stage that he is able to get very good fees for his work.

The physical examination showed him to be a man of excellent nutrition, of good musculature, in good condition except for a blowing systolic murmur heard best at mitral area. This mitral lesion was well compensated for and unquestionably played no part in his symptoms.

An analysis of the symptoms showed that the headache was really *not a pain but a feeling of tension in the head,* which I find is usually associated with "circular thinking"; that is where a group of ideas and emotions continually obtrude in the consciousness, are brought into the mind with every stray association despite the will of the patient and, therefore, causing in him weariness and rebellion. The dizziness turned out to be sudden waves of "unreality feeling" dreamlike states in which reality and unreality could hardly be distinguished, "so that my mind reeled." The lack of endurance was largely based on the homely fact that a long inward struggle is debilitating and de-energizing.

This young man's symptoms are therefore, neurasthenic to a high degree, if we accept the idea that fatigue involving the mental function is the central feature of the case; but back of these symptoms as a cause is over-exertion mentally, over concentration on the goal, *and back of that a misguided conscience. For the sin of sins in his eyes, was "wasting time";* in his code every minute must see forward movement. Nor was this due to over-ambition; it was an *ethical attitude* that forced him to work when his mind and body cried for rest. Therefore he never relaxed but that the pangs of an outraged conscience made him miserable afterwards. His rare moments of pleasure were paid for like the spree of an occasional drunkard; by an intolerable self-accusatory state afterwards. Yet, by nature he was no ascetic, he took pleasure in company, he "liked girls," he rejoiced in sports, that is, he had all the makings of a normal man. But by what may be termed a local defect, or *more specifically a wrongly-acting conscience,* he was kept from enjoyment and relaxation; was in a markedly neurasthenic state.

A very simple course of therapeutics worked marvels. His attitude was held up to ridicule, and its absurdity, its inefficiency exposed to his own view. *It was even declared to be immoral* in that as a general cause of conduct it would deprive the world of all pleasure and break down the social structure. He was advised to give up some of his outside tutoring, to take regular rest during the day, but especially to join pleasure clubs and groups, to become a "regular fellow" rather than a bigot for work. He promised to do this and kept his promise faithfully, especially because the prescription, once his scruples were overcome, filled him with anticipatory delight. In a recent interview he states that he takes part in card games, has joined a golf club, goes to dances, and yet is doing better work than ever before and that he feels "simply great." His recovery, therefore, has been very gratifying and has completely justified the etiological standpoint and the treatment.

The second patient, a stenographer of 27, seen in private practice, presented a much more delicate problem and one where a not inconsiderable degree of danger attended the therapeutic advice. This lady came of a New England stock that was made to order for the novelist, in its hypertrophy of conscience and in the complete repression of all immoral acts and thoughts; with a stern attitude towards any form of self-indulgence coupled with fine ideals of service and duty. Types similar to this girl are seen everywhere in New England; over-earnest, over-scrupulous, and not least in importance, giving so little thought to their own appearance and disdaining so much to use the little artifices by which women make themselves attractive that they are as a result somewhat dowdy. She had always been rather "nervous," that is, easily fatigued, with but a slender appetite and uncertain sleep, with little natural exhuberance of spirit, somewhat shy, but friendly. However, she had had no real illness of any kind, had worked well and was a success in her work and loved it despite its difficulties and disappointments. Of late months she had been sleepless and had suffered pain in the back of the neck and the base of the skull, with occasional dizziness. There was, in addition, a very troublesome fatigue, an absent-mindedness that impaired her efficiency, and this, in its turn, irritated and alarmed her. It was admitted that all these symptoms were increased at the menstrual period.

A careful physical examination showed no noteworthy change from the normal except a slight increase in the reflexes. The symptoms were then re-discussed. The headache was no ordinary pain, it was a "tight, full feeling in the head." The dizziness occurred only rarely and was really a conjoined feeling of faintness and instability.

"Do these feelings relate to distressing thoughts?"

She admitted they did.

"Some unhappy love affair?"

"No." (She had had an affair at twenty, but broke it off because of knowledge of misconduct in the young man's past. She did not regret it now.)

"Did the distressing thoughts have anything to do with misdeeds of her own?"

This was a critical question and very apparently took her off her guard. She reluctantly and almost inaudibly admitted they did. It transpired that unfortunately for her each menstrual period was associated with a greatly increased eroticism which rendered her very uncomfortable for a few days and especially at night, and then it vanished. On one occasion, without being really aware what she was doing, since she was in a very sleepy state, she masturbated. Relief came at once and she slept soundly but awoke very self-accusatory. The next period the same thing occurred, except that the act was a deliberate escape from the torture of her excitement. When she awoke she became acutely miserable; thought of herself as a vile sinner beside whom a Magdalene was virtuous; thought her case was unique and without precedent amongst well-bred women. She could not free her mind from its burden; though her erotic feelings were gone, she became engaged in an inward struggle which became obsessive, in that it occupied her mind and was associated with bitter self-accusation and self-reproach. The headache gradually appeared with the continuance of the self-accusatory state. The inwardly directed attention of course prevented the shifting of attention outward so that her efficiency fell off and a vicious circle was set up, *in which self-accusation brought about inefficiency* and *inefficiency added to self-accusation.*

It is obvious that this case presented a delicate problem in therapeutics, for certain obvious directions are forbidden by morals and law and are besides valueless in the hyperconscientious. Essentially she was told that her act was not so much immoral as unesthetic and besides was exceedingly common. The last statement astonished her greatly and had a commensurate degree of comfort. She said afterwards that a load was lifted from her when she heard this statement. She was told her act was inadvisable, yet if it happened again she was not to fall into a passion of reproach but was to look on it as evidence of a common frailty and nothing serious, either physically or morally.

It may be added that in order to allay the eroticism of the menstrual period, large doses of bromide were prescribed with instructions to use them just before the onset of the menses and throughout the period. She appeared two weeks later, very grateful for her recovery, though she had not used the bromides. She stated that she had no notion of telling about her failing and would not have consulted a physician had she suspected that it would be divulged. The confession itself gave relief but largely she attributed her recovery to the new point of view which she accepted and used towards her sex difficulty. *In other words, a hyper-conscientious attitude has been dropped and a rational, fully as moral attitude, substituted.*

These two cases though principally cited as illustrating minor and easily adjusted types of hyper-conscientiousness, what might be called obsessive conscientiousness, also exemplify *de-energization.* By this term is meant what is usually called neurasthenia, but there is this difference in that neurasthenia implies that a nervous system is principally involved functionally, but in my belief in a very large number of cases the primary energy difficulty is more of a matter of the whole organism than of the nervous system. Such is the de-energization following the infections as influenza, pneumonia, typhoid; such is the type seen in tuberculosis and certain cases of syphilis; such is the de-energization of the menopause and other internal glandular derangements where the energy of the organism is attacked by widespread changes.

The most interesting types of de-energization, at least to the neuro-psychiatrist, is that which occurs as a result of so-called psychical causes. It cannot be over-emphasized that for the medical man there is no psychic separable from physical. For example, in the last analysis, an *emotion* is a profound disturbance in vaso-visceral-motor-neural relations; that is to say, consists of ch~~anges in the blood str~~eam, changes in the secretory activities of the viscera, changes in the tension and position of muscles and joints, and changes in the activity of the nervous system. An *idea* is largely a cerebral excitement tending to arouse memories of other cerebral excitements and to produce motor activity of some kind either of the blood vessels and viscera or of the skeletal muscles or both. In other words, so called psychic activities not only cause modifications of metabolism and function, but may safely enough be considered *as* modifications of metabolism and function. Their action may be considered as comparable to the action of drugs, for an emotion may effectually duplicate the effect of atropine or other drugs, ***with this essential difference,*** that its persistence in memory may cause the effect upon the organism to be repeated frequently each day during the rest of the individual's life. In other words, though comparable to drugs in many respects, emotions are infinitely more potent than drugs in other respects.

Now there are energizing ideas, emotions, sensations, and experiences, and there are more or less indifferent ones. Of great importance socially and medically are the profoundly de-energizing psychic changes which lower endurance, unfavorably modify the metabolism, disturb the appetite, prevent sleep, are associated with pain, etc. Without attempting even in the broadest terms to consider the entire subject, it may be stated that ideas, memories, experiences, emotions and attitudes ***that tend favorably to influence the human being's opinion of himself, energize; that those which lower his opinion of himself de-energize and influence the entire organism in an unfavorable way.*** Thus, for de-energizing powers, the humiliation, and insult, before which one is powerless, are noteworthy. So, too, a failure of belief in one's self, that is, in one's powers and abilities, hurts efficiency and breeds neurasthenia, as every trainer of athletes knows, as does every man who has struggled against a bad habit. Fear which ultimately is a feeling of impotence or incapacity as against some other force, offers the finest examples of de-energization and its effects range from the sudden swoon of terror to the sleepless, appetiteless, and achey housewife who feels herself becoming a plain drudge, losing youth, beauty, and hope of betterment. The tonic effect of ***praise*** is related to its increase in self-valuation, just as the depressing effect of ***blame*** is to be linked up with its self-depreciation. So, too, ***success,*** either merited or otherwise, increases the energy, and ***failure,*** even if undeserved, produces a brooding de-energization. I do not mean that ***ego-valuation*** is the only factor in nervous-energy release and obstruction, but it is one of the great factors.

Indeed it is to be hoped that the poet's prayer that "we may see ourselves as others see us" may never be realized, for, to the majority of us, the shock to our ego-valuation would be profoundly de-energizing.

LOW ARTERIAL TENSION, ETC.

By George Van Ness Dearborn, M.D., Cambridge, Mass.,

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An editorial entitled "Low Pulse Pressures" interested many readers of the Journal, and although printed May 23, 1918 (Vol. 178, No. 21), now more than a strenuous year ago, it contains one or two points worthy of further, even late, discussion. It merits discussion despite our relative ignorance still of vasomotor control, and especially in its relation (or so I think) to the corresponding (cerebral?) quick variations in the capacity of the left heart and of the arteries.

Blood-pressure and pulse-pressure appear to be used, for some reason, in this timely and suggestive editorial, as synonyms. Technically, they mean very different things, as the writer thereof of course knew; "hyposphyxia" means low blood pressure, and probably no one has ventured a Greek term for low pulse pressure, the systolic pressure at any moment less the diastolic. (A cumbersome and wholly unnecessary term, but one etymologically correct, would be ***hyposphygmodunamia.***)

Very numerous hemobarograms made by my "continuous" method, varying in length from five to an hundred and twenty minutes, but mostly about thirty minutes, and on ages from five years to seventy-three, both sexes, in numerous degrees of vigor and of health (especially of mental health and disease), indicate the complete independence of pulse pressure from blood pressure. Children of health and sturdiness regularly have low levels of tension ("hyposphyxia") with diastolics of 40 mm. Hg. and lower, but high contrast between the systolic and the diastolic averages: normal and infantile pulse pressure. Old persons, on the other hand, with the usual (but usually ***unnecessary***) degree of arteriosclerosis, frequently have high arterial tensions from moment to moment, but sometimes they have low pulse pressures, because their diastolic tension is apt to be high, and their hearts ***relatively*** inefficient. Two of my records (not here shown), made from sclerotic dements at Mattapan, of 73 and 68 years respectively, however, show pulse pressures of 120 mm. Hg. and 90 mm. respectively, the diastolic in the former case being 80 by the sounds-gone

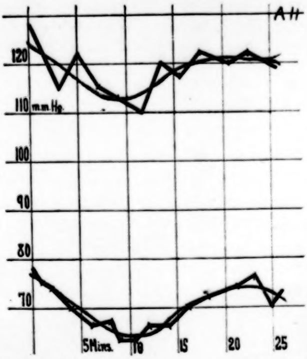


FIG. 1.—Girl, 15 years, 10 months, Forsyth Dental Infirmary for Children. The essential parallelism of the systolic and diastolic curves is sufficiently obvious, and the pulse pressure is about 50 m.m. Hg. throughout, with the diastolic readings *not* by the newer sounds-gone method. Initial heart-rate 60, with systolic of 128 m.m.; rate at end of experiment, 76. 4 P.M. In passing, the initial fall for 12 mins. is worth noting for its clinical moral, and that the diastolic curve is very unusually smooth for this age and sex. (Hemobarogram A11.)

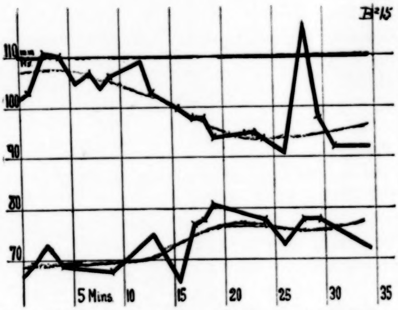


FIG. 2.—Young woman 20 years, 4 months. 3 P.M. Diastolic not by the newer sounds-gone method. Here one sees a pulse-pressure of 30 m.m. or more lessened in 20 mins. to 15 m.m. The rise beginning in the 27th minute, much the more marked in the systolic (as one expects at this age), was due to the recall of a recent intense grief. The heart rate at first was 83, nine minutes later, 75, and at the end, 68.

method, and in the latter case 120 mm. I am unable to explain this syndrome. The diastolic tensions of children are very much more variable, both mentally and physically, than those of adults, but none the less it is often easy to make out a pulse pressure somewhat (5 to 10 mm.?) greater than that of young adults. My records, in short, show *no correspondence* as such whatever between blood-pressure and pulse-pressure, the vasomotor control being far too various and complex to make physiological any such direct relation. Moreover, they represent very different functions in the individual.

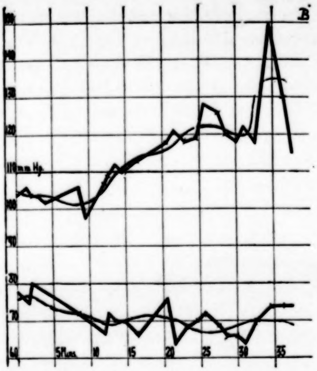


FIG. 3.—Young woman, 24 years, 3 months. This record was made after twenty minutes of athletic dancing. Starting with a pulse-pressure less than 30 m.m., in 28 minutes, it nearly doubled by the movement of both the systolic and diastolic curves. The 30 m.m. rise beginning in the thirty-third minute was the recall of a severe sorrow. The diastolic was made not by the newer sounds-gone method. The heart-rate at the beginning was 81; twenty-four minutes later, 72; and six minutes later also, 72.

As I demonstrated to the American Psychological Association (28 Dec., 1916), this irrelation apparently accords especially with the *duality* of arteriotensional control. The ever-varying systolic tension represents especially the ever-changing output of the left heart, which latter is very quickly variable in size (Gesell) as well as in the frequency of its contractions. The diastolic tension is more dependent on autonomic vasomotion, direct and reciprocal. Thus the systolic variations are more mental and the diastolic more somatic and "biologic." *"Arterial stuffing and constriction* are very active in all persons," and respectively seem to indicate the two complementary aspects of the human personality, symbolized also in man's unique bi-stratified cortex cerebri: neopallium and archepallium. I present this as my vasomotor thesis not yet demonstrated. And vasomotion needs study.

Divergence and convergence (during an half-hour or forty minutes) of the plotted curves representing respectively the systolic and the diastolic tensions are at present under investigation in my clinical workshop. Why should the pulse-pressure sometimes progressively increase, *e.g.*, from 26 mm. to 58 mm. in the course of 32 minutes? or decrease from 41 mm. to 13 mm. in 17 minutes, or go from 50 mm. to 16 mm. in 3 minutes, lessening later to 10 mm., the individual being a "husky" young

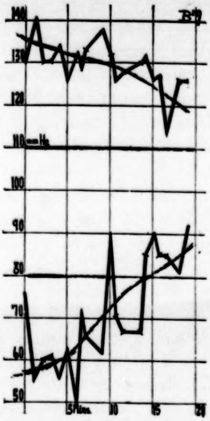


FIG. 4.—Male microceph of 19 years (mentally 1.8, Binet-Simon-Terman) Massachusetts School for the Feeble-Minded, Waverley. This hemobarogram, wholly atypical for the mentally deficient in general but typical of the lowest mental grades probably, is interesting, particularly in its diastolic part (made not by the newer sounds-gone method). A momentary pulse pressure of 87 m.m. in eighteen minutes had lowered to about 30 m.m. Heart-rate at beginning, 60; nine minutes later, 68; five minutes later, 60; and at the end, 64. (Hemobarogram B^{1}9.)

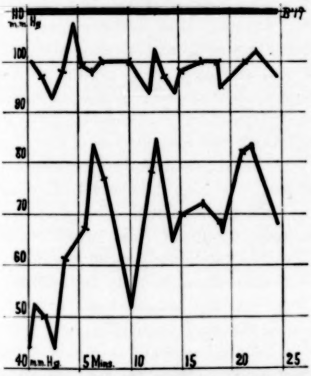


FIG. 5.—Girl 8 years, 9 months. Forsyth Dental Infirmary for Children. The alertness of this lively child is indicated by the wide diastolic variations (measured not by the newer sounds-gone method.) Starting with a pulse pressure of 50 m.m. Hg., fifteen minutes later it was about 30 m.m. The first marked rise was due to the recall of the delight of a particular violin piece (she being instinctively musical). The second was due to the recall of falling downstairs (seemingly excessively exciting until one learns that she fell three flights and was in bed for a fortnight afterward). Heart-rate at beginning, 104, and at the end, 95. (Hemobarogram 9^{1}19.)

woman of 22.5 years, apparently in perfect mental and physical health? Each such record is a mysterious human document at present, with its interpretation to come when the alphabet is learned.

In other cases a-plenty, the two pressure-lines remain parallel to a surprising degree, despite wide variations in tension. In still other cases

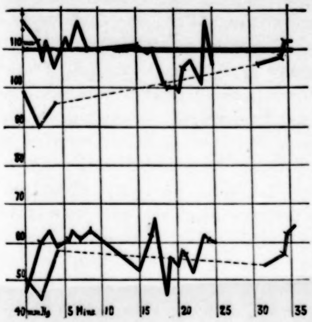


FIG. 6.—Man, 44, instructor, Harvard Summer School. Two separate hemobarograms, the solid line a month after the hollow line.

The latter shows an initial systolic averaging about 94 m.m., while the diastolics by the sounds-gone method were below 50 m.m.—in a man of this age, a few millimeters lower than the former method based on a supposed phase-change in the Korotkoff water-hammer sounds. Thirty minutes later both series were up a little. Heart-rate at beginning, 80.

The later measurements (solid line) show an early pulse pressure of about 50 m.m. The initial systolic was 18 m.m. higher than it was a month earlier although at 10 A.M., whereas the former was at 3 P.M. From the eighteenth to the twenty-second minute the effects of voluntary relaxation are shown, both curves showing some effect. The heart-rate at the beginning was 68, the subject being much more nearly normal than a month previously, nearer his attack of influenza. (See text.)

The two dots above, on the initial line, are the man's systolics, two minutes apart, six years before, showing an unusual sameness, perhaps due to his regular athletic training during this time and before. Heart-rate, 72.

all these three groups are exemplified within an half-hour, or even in less time, as the intricate business, mental and somatic, of the vasomotion demands. Each hemobarogram is unique, and each of absorbing psychologic interest in the James-Lange theory of psycho-physical relationship. Armistry replaces "palmistry," so to say.

Low general pressure (without regard to pulse-pressure any more) is certainly a topic in pressing need of study more systematic and deliberate than any one, so far, apparently, has given it. My own casual observations are numerous, and confirm mostly the generalizations of your editorial, with the reservations to be noted. There are a good many over-worried or over-studious young persons of each sex, but more females, whose systolic tension ranges in the nineties, and diastolic (by the sounds-gone method,—the only dependable way), in the sixties, fifties, and even forties for short periods; people without perceptible myocardial weakness or valvular leaks, and capable of a large amount of work,—some of them college athletes. In age the range of my cases is mostly between nineteen and twenty-one, largely perhaps because most of them are colllege and normal-school students.

Hemobarogram Fig. No. 6, however, is a physician, now 44, an athlete by training and a well-known "physical director." The hollow-line curve shows his arterial tension at 3 o'clock one July afternoon; he looked haggard and discouraged, and was distinctly worried or flustered. He had had the influenza a few months before. The solid line curve shows the same man's pressure about a month later at 10 a.m. In the twelfth minute he began a forced "relaxation," and its effects are seen for five minutes. These are the arteriotensions of an athlete in the prime of life. Perhaps the lowness of the diastolic pressures are worth noting, even if the systolic lowness is not.

It is hard to doubt that cases of which this is an example have their low arterial tension (when in a state of relative mental rest) due to some as yet undescribed syndrome of endocrines and the autonomic nervous mechanism. The posterior pituitary often is suspected. Vasomotor physiology and psychology are so new, yet so important! Only a few years ago the intricate vasomotor apparatus of the brain and cord was wholly unappreciated and the cerebrum said to have neither lymphatics nor vasomotors! Now we begin to know at least how little we understand its all-important complexities.

I wish to emphasize that most of these hyposphyxiacs are somehow only *functionally* wrong: —they are not "obese," not "neurasthenic," not in the "pretubercular state," and not primarily dyspeptic. They do tend to be anemic, nervous, over-worried and *flabby-muscled*. Indeed, it is quite certain that part of the lowness of their "arterial" tension is in reality the lowness of the tension of the *muscles* on which the pressure of the sphygmomanometer-cuff partly, or mostly, rests. In other words, our present method of measuring blood-pressure is most inadequate, as years ago I pointed out. It is only because blood-tension and muscle-tension are more or less generally functions of each other that the cuff-method has any indicative value at all, for muscle and fat and connective-tissue are far from being the "perfect-fluids" that the cuff-method theory, so to call it, demands. The real blood-pressure (as Brooks and Luckhardt showed) is far below the compensating pressure in the manometer, and in the cuff around the arm. Still it remains, however, when properly adapted, the best demonstrated method devised for general practitioners' use.

Without speculating on the applied endocrinology which might cure these low tissue-tones and give them a new motor "pep" (this some day will be developed), I venture to point out that these folk need effective reëducation and fundamental regeneration above all else. Back to the active all-round life on a variously well-developed and modern hill-farm of New Hampshire or Vermont! Or secure them, say, a year or two at a good-humored school of physical education where there is plenty of music and dancing and a good mental and physical variety. Or a mountain winter-and-summer resort not dominated by mollycoddles or by cranks. Or a jolly out-door year on an Arizona ranch.

Here following is a typical history from the research-protocols of the Sargent Normal School: Woman, 23, entered in October, 1913, obviously "anemic and run-down." Heart-rate 85; systolic blood-pressure 98; weight, 117 pounds. October, 1914, after a year of happy systematic training and theory study in the School and at Camp, "the picture of health." Heart-rate, 63; systolic blood-pressure, 106; weight, 137 pounds. Her blood's quality had developed, heart-rate lowered (as it chanced to be taken) 22, blood-pressure raised 8 mm., and her weight had increased 20 pounds—four distinct signs of basal improvement. This is a sample of a rather large group of cases which need only happy, varied, moderately strenuous life (abundant muscular exercise, fully fed, included) to make them into the best kind of "new women." When will the profession effectively learn this deep but simple lesson and the habit of applying it to these difficult cases who lack the knowledge and thought and initiative to arrange and use this native common-sense for the regeneration of their organisms? Where are drugs in comparison? or electricity? or mechanotherapy? or marriage? or mental influence?

But now we understand something of the reasons for this general young-adult debility so common in the women's colleges:—a low blood-pressure dependent on low trophic tone in the neurones, the muscles, and certain of the glands. None the less, barring heart-leaks and a rare youthful myocardial insufficiency, I am able to discern no sinister suggestion in these low-pressures any more than in the slow hearts (a female case of mine, stalwart, 25 years old, had as her normal heart-rate 39 per minute), or even the young irregular hearts when due (as the slowness seems to be due sometimes) to basket-ball, or to over-strenuous muscle-work in child-hood. In the Harvard Summer School I see some of these cases year after year, have excellent opportunity to get efficiency histories, and could watch evil developments if there were any; but there are none. I am tentatively at least convinced that these three, low blood-pressure slow hearts, and young irregular hearts (like so many *bête noirs* of our medical student days: albumenuria, casts, safety-valve murmurs, ovarian cysts, functional scoliosis, deviated septums, etc.) are in many instances, perhaps in most, but effete ideas of the phobic kind. The technical details of their respective exact causes and controls will possibly before long come from the research laboratories if not from clinical guessing; but meanwhile we may safely believe that many, if not most of them, are purely functional and insignificant of serious harm.

As a corollary of all this work on the relations of mind and the autonomic vegetative mechanism: Considering the acute sensitivity of the vasomotion to emotional and to intellectual stimuli coming partly from the brain proper and partly from the endocrines, via the autonomic, it seems reasonable to expect that vasomotion will help greatly in neurologic diagnosis, in psychiatric explanation, and in mental estimation—whenever we have learned, from physiologic research, how to interpret the complex and very active and rapid reactions observed.

THE SCARLET FEVER WAVE IN 1919.

By Stanley H. Osborn, M.D., C.P.H., Boston,
Epidemiologist, Massachusetts State Department of Health.

Scarlet fever in Massachusetts is increasing daily and more cases were reported in October this year than in any previous year. This scarlet fever wave is seen in the following table:

Year	Aug.	Sept.	Oct.	Total for 3 Mos.	Total for Year
1915	274	299	439	1,012	8,613
1916	154	201	305	660	6,271
1917	145	248	440	833	5.954
1918	122	177	225	524	4,490
1919	248	407	789	1.444	5.572*

* Ten months.

In a similar manner the deaths due to scarlet fever are increasing in number.

There had been no signs indicating the coming of an unusual amount of disease up to July, but in August, instead of the continued decrease in cases as normally occurs, there were 248 cases compared with 268 reported in July, or in other words, the disease held its own and thus secured a foothold for the winter from which to spread. It is fair to assume that the disease will increase, and increase markedly, unless educational work is carried on throughout the state against this disease.

The accompanying charts indicate the yearly incidence of scarlet fever since 1894 and the monthly incidence for the years 1915-1919, inclusive. Particularly impressive is the peak of 1914 and the constant decrease in cases the ensuing four years, with the low point in 1918. The chart showing the monthly prevalence from 1915 to date brings out one prominent fact, the high August incidence, instead of a continued decrease compared with July, as in other years.

To sum up, Massachusetts has had a decrease in scarlet fever for a four-year period, the longest time that the records have shown a continued decrease in the incidence of the disease. The result is that there is a large number of children in the State who have not had the disease and who will furnish material for a continued spread of the disease until the number of non-immune children has been greatly diminished.

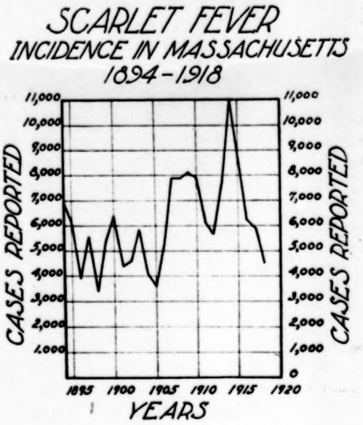
Reasons for the Increase in Cases.

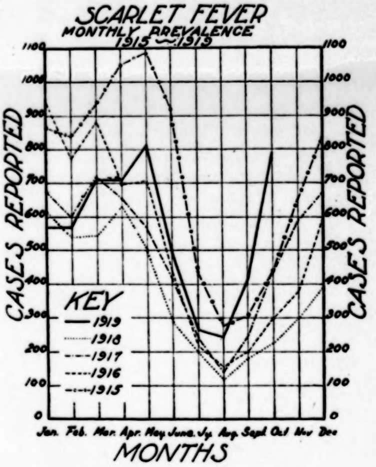
The reason for the increase is partly due to the increase in susceptible material since 1914, that is, children who have not had the disease. The year of greatest incidence in scarlet fever was 1914, when the greatest number of cases occurred in the spring months; for example, in March there were 1,717 cases reported. The present increase seems to indicate that we are to have a like increase with the largest number of cases yet to come.

Investigation this year has shown that contacts are not excluded from school in all cases and these serve as foci of infection for further spread of the disease.

Mild cases are found in school constantly and are often the chief cause of continued cases in the same school and neighborhood.

The cases are practically all among school children and the pre-school age group. The only way to control the disease is daily medi-





cal inspection at the schools in an effort to keep the school clear of mild cases of the disease. The closing of the school would tend to disseminate the disease into every part of a community instead of perhaps localizing it in a school district. Schools, where daily medical inspection of pupils can be done by a school physician or experienced public health nurse, and other public places should not be closed.

Milk is an infrequent factor in the spread of scarlet fever at the present time due to the prompt reporting of cases on milk farms and consequent action by the local boards of health. In Massachusetts, for the period 1909-14, 845 cases of scarlet fever were traced to milk as a source of infection, while for the period 1915-1918 only 140 cases have been traced to milk.

What We Know About Scarlet Fever.

1. The incubation period is from two to five days with a maximum of eight days.
2. The infective germ, or agent, is present in the nose, throat, ear, and suppurating gland discharges for about 28 days after the onset of the average case, and on this fact the quarantine period is based.
3. As long as a sore throat or body discharges exist in a case of scarlet fever, the patient should be considered as capable of transmitting the disease. All persons who have been in contact with a case of scarlet fever may become sick at any time within eight days after the last contact with the patient as this is the maximum period of incubation for practical purposes of control of the disease.

A method of control of scarlet fever based on these facts will aid in diminishing the disease if carried out by a health board with the coöperation of the public.

CONTROL OF SCARLET FEVER.

The control of scarlet fever is based on the detection of cases, especially mild cases, in the acute stage of the disease. On the detection of these cases rests all further public health measures such as the isolation of the case, quarantine of contacts and the epidemiological investigation into the cause of the outbreak. A community should not criticize a local board of health unless each individual assists, to his utmost, the local board of health in carrying out the necessary measures to control the disease.

1. *Quarantine* of the sick patient should be carried out for 28 days from the onset of the disease and thereafter until infective discharges from the nose and throat, ear and abscesses, have ceased.
2. All school children should be excluded from school for eight days after contact with a scarlet fever case, unless they are immune by having had the disease previously.
3. A daily medical inspection of schools where a scarlet fever case has appeared is the

best single method to clear a school of scarlet fever, for mild and beginning cases will be detected and proper precautions taken. The inspection should exclude from school each child who has a sore throat, a discharge from the nose or ears, suppurating glands or abscesses, and may be carried out by the school physician, or trained public health nurse.

4. The daily follow-up work by the school nurse, investigating absentees, will disclose mild cases at home who have no physician in attendance, and who because of the mild character of the disease might return to school while in the contagious stage and infect others.

5. No person should be allowed to handle milk or food after exposure to a case of scarlet fever until the maximum incubation period has elapsed or permission has been obtained from the board of health.

6. No persons whose occupations bring them into contact with children, such as a teacher who has been exposed to scarlet fever, should return to work without permission from the local board of health.

* * *

Clinical Department.

CLINICAL PICTURE OF PNEUMONIA IN A BOY OF TWO WHO SUBSEQUENTLY PASSED 370 ROUND WORMS.

By William W. McKibben, M.D., Worcester, Mass.

This little patient was first seen at 6 P.M. Lying in bed he presented the classical picture of pneumonia:—flushed cheeks, mouth pallor, alae-nasi playing, and grunting expirations. He appeared toxic, prostrated and anxious. His pulse was 160, respirations 60, and temperature 104.

His mother had always fed him judiciously so that the only previous illness had been pertussis. A photograph taken the week before showed a fine specimen of boyhood.

However, he had been passing stringy mucus for a week or two; and the last two days had developed such a cough and cold that it culminated in his having to go to bed this afternoon. An efficient trained nurse, a friend of the family, was present and had provisionally diagnosed the case as broncho-pneumonia.

Careful percussion and auscultation over both lungs, front and back, elicited no sonorous or harsh breathing nor any fine pleuritic râles. No Roentgen ray was taken to demonstrate a marginal pneumonia. The abdomen was tender and tympanitic.

Not finding, as yet, any positive physical signs of pneumonia, further inquiry brought out the fact that three and one-half months before, the boy had spooned some dirt into his mouth from around a shrub that had been heavily fertilized, and a week ago passed a dead worm of the Ascaris lumbricoides variety.

The high temperature and severe toxemia suggested the possibility of convulsions, so that besides baths and general care the nurse was ordered to give a tablespoon of castor oil, to be followed in an hour by 1½ grains of santonin. His gastro-intestinal tract was well prepared for the treatment as he had eaten almost nothing since morning, preferring water instead of food. At midnight an urgent call announced the coming of worms. The boy was discovered lying on his back and between his abducted thighs was a wriggling mass, pinkish in color, closely resembling earth worms. At 2 A.M., he passed a similar ball of Ascaris lumbricoides. The total number from these passages by actual count was seventy-eight. The writer has these preserved in alcohol. The length varied from 1½ to 11 inches. Those under 1½ inches were not counted because there were so many and the nurse did not enjoy handling them. The small ones also tapered at either end. The males averaged from five to six inches and the females from 10 to 11 inches. One worm came up from the stomach and went wriggling out of the mouth onto the pillow.

Intestinal lavage was done with four quarts of salt solution and many more worms were flushed out in this way. In the morning the nurse was found pulling them out with forceps as they appeared at the anus. The castor oil and santonin treatment was repeated morning and night, gradually reducing the amount and frequency, so that in the next two days a total of 370 round worms were brought away, not counting those under 1½ inches in length.

A blood analysis made on the second visit showed no leucocytosis but a marked eosinophilia of 40 per cent.

The treatment, a tablespoon of castor oil at bedtime followed by a grain of santonin in the morning, was continued bi-weekly for a month with from two to five worms resulting each time. But an occasional treatment during the next three months resulted in no worms at all, and the boy waxed stronger and stronger until he was in perfect condition again.

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FRONTAL SINUS COMPLICATIONS.

By Frederick J. McVey, M.D., Boston

I was called in consultation on April 20, 1919, to a patient suffering from influenza, pneumonia, and a left frontal sinus, which had broken through the floor into the orbit, the left eyelid was swollen, red, and the eye could not be seen, as the eyelid remained closed.

History of the case was that the patient had received a severe blow in the left eye on March 28, 1919; also went motorcycling with only a jacket on for a distance of about 60 miles, and on April 18, 1919, took to bed. The physician in attendance called me in consultation. We examined the chest and found the characteristic signs of pneumonia; also the septic condition of the left eyelid. Nasal examination showed no pus.

I suggested an operation on the left eyelid and to do frontal sinus operation under local anesthesia, but the parents refused. One week later I was called in consultation again; the pneumonia and influenza had subsided. Again I suggested an operation and was discharged as consultant. The attending physician kept me informed daily with the case; the eyelid was later opened up and considerable pus escaped and kept draining about ten days. Then it subsided and patient became delirious, opisthotonous was present.

On May 12, 1919, the patient died. An autopsy was performed; the floor and posterior walls were found perforated, and a frontal lobe abscess was found. The reason for its perforating these walls is because the thinnest walls offer the least resistance. The microscopical finding showed streptococci and diplococci which strongly resembled the pneumococci.

◆

Dr. Elbridge Simpson Pixley died at his home in Pittsfield on October 11, at the age of eighty-seven years. He was born in Great Barrington in 1832, the son of Mr. and Mrs. Luther Pixley. Dr. Pixley was graduated from the Eclectic Medical College in Philadelphia in 1878 and began practising in Detroit in 1882. In 1860 he married Miss Henrietta E. Peet of Sandisfield. He is survived by one daughter, Mrs. Adolph Feiner of Pittsfield.

Society Reports.

AMERICAN PUBLIC HEALTH ASSOCIATION. SUB-COMMITTEE ON PATHOMETRY OF THE INFLUENZA EPIDEMIC.

Notes on meeting of the Sub-committee on Pathometry, Committee on Statistical Study of the Influenza Epidemic, American Public Health Association. Meeting held at Columbia University, Fayerweather Hall, September 19, 1919. The following were present:

Charles C. Grove (Chairman), Columbia University; Raymond Pearl, L. J. Reed, Johns Hopkins University; Otto R. Eichel, New York State Department of Health; Haven Emerson, late epidemiologist, office of the Chief Surgeon, A. E. F.; E. O. Jordan, University of Chicago; J. Arthur Harris, Carnegie Station for Experimental Evolution, Cold Spring Harbor, N. Y.; James W. Glover, University of Michigan; Arne Fisher, Prudential Insurance Company; Ellsworth Huntington, Yale University; J. Warren Smith, U. S. Weather Bureau; Edgar Sydenstricker, U. S. Public Health Service; Edwin W. Kopf, Metropolitan Life Insurance Company.

Professor Grove, in opening the meeting, said reports of progress in the tabulation of the empirical statistics of the epidemic showed that data suitable for pathometric study would soon become available. He said there were a number of basic questions which analysis should dispose of before attempting elaborate mathematical studies. He invited members of the conference to state what they considered problems of fundamental importance in order that agreement could be reached by informal discussion and resolution. The questions are set forth below, together with the consensus of opinion:

I. *Can any mathematical function rationally express the epidemic process (a) chronologically, (b) as to age incidence, (c) in relation to epidemic and endemic occurrences of diseases known as "influenza" and "pneumonia" in past years, for a particular community?*

The first conclusion of the Sub-committee was that no mathematical function, simple in nature and, therefore, practicable, could probably be found at present to express analytically the "law" of this epidemic. This conclusion was reached after considerable discussion of the nature of epidemic data in general and the statistics of this influenza epidemic in particular. The use of the Pearsonian Type IV equation, and the equations of other frequency curves in the Pearsonian system, seemed to the Sub-committee to be undesirable so far as stating the quantitative characteristics of this epidemic are concerned. The law of an epidemic may be represented, the Sub-committee believed, only by an analytic expression which takes into account the extremely complicated cross-play of factors involved, and not by an equation representing the random distribution of the sizes of things. The Sub-committee seemed to doubt very much whether any analytic expression could be found to express the "law" of any epidemic. The fact that several functions based upon widely different hypotheses of epidemic action each gave results statistically indistinguishable from the other, convinced the Sub-committee of the need for an ultra-conservative attitude toward the mathematical statement of epidemic generalities. The epidemic process is by no means as simple as the controlled procedures of the physical and chemical laboratories. The comparative ease with which the facts of physics and chemistry are expressed analytically does not exist in epidemiology. Some light may be shed upon the higher analytics of this epidemic if epidemiologists and pathologic and sanitary bacteriologists will stipulate which of the many factors in the epidemic process are supremely important and which are not. By confining attention to a very few factors, an analytic expression for the "law" of an epidemic *may* be found, but as to this, the Sub-committee has nothing definite to offer.

II. *Shall the pandemic explosion of 1918 be studied in relation to the course of acute respiratory disease since the preceding world-wide extension of the disease known as "influenza"?*

The Sub-committee had before it the proposal that perhaps the undulations, seasonal and otherwise, of the curve for acute respiratory disease since the pandemic of 1889-1891, could be represented by a harmonic analytic function; that the experience of the autumn and winter of 1918 and the early part of 1919, was but the latest of a long series of waves, the close of a cycle of respiratory disease mortality. Although the representation of thirty years of respiratory disease mortality by means of a Fourier series seemed possible, the Sub-committee thought that such representation alone, without sound support for the proposal from clinicians and epidemiologists, would be a misapplication of the statistical method. The Sub-committee urged that the crude facts for the present pandemic period be studied intensively in relation to the mortality from acute respiratory disease during the thirty-year interval separating the two pandemics. Such study might provide the basis for an analytic expression representing a cycle of respiratory disease mortality. The conception that the invasion of 1918-1919 was not an isolated, explosive phenomenon, but was part of a chain of events leading back thirty years or more was held to be worthy of further discussion. The epidemiologists are asked to say whether they believe further analysis of the 1918 pandemic data from this angle seems justified. A full display of the earlier statistics so far as possible by month, and by sex, and age, seemed to be desirable. The Sub-committee wished to be advised by clinicians as to whether the 1918 pandemic was a distinctively different disease from that known as "influenza" in past years, or not.

III. *On "norms" of influenza-pneumonia mortality and morbidity.*

In the lack of any definite information that the symptom-complex known as influenza, and the associated pneumonias, identified in the 1918 pandemic are the same diseases as those known by the same names in past years, the Sub-committee felt that it could offer no suggestion as to a "norm" of mortality or morbidity which would have a sound philosophic basis. The Sub-committee realized that if the pandemic had not occurred, a considerable number of deaths would have been *reported* anyway as due to "influenza" and "pneumonia." In order to arrive at an approximate idea of the number of "excess" deaths due to the morbific influence of the new (?) disease, some attempt should be made to estimate the "expected" number of endemic so-called influenza-pneumonia deaths. An absolutely satisfactory solution of this problem was deemed to be impossible because of the clinical, nosologic and other difficulties involved. The Sub-committee finally approved tentatively the idea that an "endemic" figure be computed from

the mean annual death rate for influenza-pneumonia of as many years preceding the pandemic as practicable and properly classed according to the month and week in the calendar year, by race, sex, age, and other particulars where the data are accessible. The material used as a "norm" will depend upon the amount of detail available in historical statistical records.

IV. ***On the disease data to be investigated.***

On the motion of Prof. Jordan, the Sub-committee considered the kinds of data to be investigated analytically. The Sub-committee was of a mind that the case-fatality of the disease had varied enormously from one community to another, and that it would be necessary to have accurate morbidity statistics of influenza and of its complications before the mortality problem of the disease could be understood. Prof. Jordan mentioned the records of low mortality for cities in the Northwest and urged that some information be published, if available, on the influence of (1) low case-incidence, and (2) either high or low case-fatality, upon the spread of the disease and upon the mortality records of these cities.

V. ***On a study of causal relationships in influenza.***

The Sub-committee wished to caution all research students in the use of statistical devices ordinarily employed to assist in arriving at conclusions of causal relation between one phenomenon and another. It was agreed that the theory of correlation is at the present time in an unfinished condition and that any results of correlation studies be considered only as suggestions for intensive work on the part of clinicians and pathologic and sanitary bacteriologists. The correlation method in the statistics of influenza would, it seemed to the Sub-committee, be economical of research effort, because it can direct attention to the matters which it is most vital to investigate.

Because of the multitude of factors involved in the pandemic (not all of which are of the same weight, however), the method of multiple correlation was recommended as the one most likely to prove useful. A discussion of what factors the statistical analyst ought to be prepared to deal with followed. It was shown that in any phenomenon of infectious disease there were three basic elements: (1) the invading organism or group of organisms, (2) the host, or population receiving the attack, and (3) the external environment of both invader and host. The principal facts which the analyst must bear in mind with respect to the invader are as follows:

a The size of the dose of infection.
b The frequency with which the dose or doses are brought in contact with the host.
c Tendency of the invader to specific localization.
d Infectivity of the organism or organisms (power to produce sickness.)
e Virulence (power to produce death.)
f Activity of invader in the presence of existing bacterial flora.

The characteristics of the host to be considered are related below:

a Opportunity for receiving dose of infective material:
  Density of population; transport systems; public assembly; other channels of communication between the infected and the uninfected.
b Natural and acquired immunity to invasion and multiplication of organism or organisms, and to poisons produced by the invader.
c Resistance factors:
  Nutrition, general physical condition, fatigue status, hygiene of environment, existence of definite bodily and mental states (injuries, effects of other diseases, and intoxications, etc.), personal habits, medical and nursing care of those infected.

The third factor is the external environment of both the invader and the host. Temperature and humidity, separately and when acting together, and *changes* in the same, may be expected to have some influence upon infectious disease and especially upon respiratory and influenzal disease. By the ordinary methods of graphically associating weather and influenza-pneumonia data no very clear idea can be formed of the relation between these two elements. Students of this phase of the causal relation problem are urged to employ proper methods of measuring the combined effects of temperature *and* humidity, and of variations in the same. It is possible also that only accumulations of excess or deficiency of temperature and humidity from an "optimum" or

"norm" will show correlation with influenza. Some of the points to bear in mind in these correlation studies of weather and influenza data are, it seems to the Sub-committee:

- *a* Explosiveness or "epidemicity" of the epidemic.
- *b* Time distribution.
- *c* Aggregate of epidemic damage regardless of explosiveness or time distribution.
- *d* Infectivity of the organism at various stages of the epidemic wave.
- *e* Virulence of the organism at various stages of the epidemic wave.

As to the effect of weather conditions upon the case-fatality of the disease, the Committee recommended that, wherever possible, mention be made upon case records of prevailing weather conditions, and that such case-records be studied in relation to the various weather elements and variations in the same.

VI. *On the nature of research studies in influenza statistics.*

The Sub-committee wished to urge through its resolution that the inductive studies discussed in these notes be supplemented by deductive inquiries. Rigorous analysis, applied to reasonable hypotheses of the epidemic process, and referred from time to time to empirical facts may lead to results of value.

For the use of analysts, the following bibliography is given:

Brownlee, John:
"Theory of An Epidemic," *Proceedings,* Royal Society, Edinboro, Vol. 26, Pt. IV., p. 484, 1906; "Certain Considerations on the Causation and Course of Epidemics," *Proceedings,* Royal Society Medicine, London, June, 1909; "Mathematical Theory of Random Migration and Epidemic Distribution," *Proceedings,* Royal Society Edinboro, Vol. 31, Pt. II., p. 261, 1910; "Investigations into the Theory of Infectious Diseases," *Public Health,* London, Vol. 28, No. 6, 1915; "On the Curve of the Epidemic," *British Medical Journal,* May 8, 1915; "Certain Aspects of the Theory of Epidemiology" (with mathematical appendix containing review of Greenwood-Ross-Brownlee studies), *Proceedings,* Royal Society Medicine, London, May, 1918.

Evans, George H.:
"Some Arithmetical Considerations on the Progress of Epidemics," *Transactions,* Epidemiological Society, London, Vol. 3, Pt. III., p. 551, 1873-5.

Greenwood, H.:
Journal of Hygiene, XI., Plague Supplement, pp. 62-156.

Knibbs, George H.:
"The Theory of 'Happenings' or 'Occurrence Frequencies,'" Appendix A, p. 444, Vol. I, Census of Australia, 1911.

Ross, Ronald:
"Logical Basis of the Sanitary Policy of Mosquito Reduction," Congress Arts and Sciences, St. Louis, Vol. vi., p. 89, 1904; "Prevention of Malaria in Mauritius," Waterlow and Sons, London, 1908, p. 29; addendum on "Theory of Happenings," in "The Prevention of Malaria," J. Murray, London, 1911; "Some Quantitative Studies in Epidemiology," *Nature,* London, October 5, 1911; "Some *A Priori* Pathometric Equations," *British Medical Journal,* May 27, 1915; "Application of the Theory of Probabilities to the Study of *A Priori* Pathometry," *Proceedings,* Royal Society, London, Vol. 92, Series A, July 14, 1915, pp. 204-230.

Book Reviews.

Pathological Technique (7th Edition). By FRANK B. MALLORY, A.M., M.D., and JAMES HOMER WRIGHT, A.M., M.D., S.D. Philadelphia and London: W. B. Saunders Company. 1918.

The seventh edition of this practical manual is now ready. Aside from mentioning a few points of revised arrangement, it is unnecessary to comment on the success with which the work of these authors has been met. As a helpful guide to beginners and as a handbook of reference for the experienced pathologist it has become almost indispensable to technicians. On each of its five hundred and fifty-five pages the laboratory worker will find valuable assistance. It does not attempt to explain at length a collection of intricate methods and formulae, but selects and explains carefully certain methods which have been tried and found to be of greatest practical value. One hundred and eighty-one illustrations clarify the text throughout. Among other changes in this edition the postmortem technique has been put at the end. The following additions are deserving of notice: Goodpasture's stain for frozen sections of fixed tissues and also for demonstrating metachromatically the different granules in the islet and acinar cells of the pancreas; Graham's oxidase stain for the granules in the myeloblastic series of cells and leucocytes; Benians' Congo red method for the demonstration of spirochetes; Claudius' stain for flagella; and the approved method of classifying pneumococci with reference to serum treatment. A few new suggestions in the mechanical performance of fixing frozen sections have been added. The arrangement of subjects in this seventh edition is as follows: Histological Methods; Culture-Media, Culture Methods; Methods of Staining Bacteria; Pathogenic Bacteria and Fungi; Animal Parasites; Clinical Pathology; Postmortem Examinations; Addenda.

The Surgical Clinics of Chicago, April, 1919. Volume 3, Number 2, with 63 Illustrations. Published Bi-Monthly. Philadelphia and London: W. B. Saunders Company.

This number contains the following contributions: Dr. E. Wyllys Andrews: Cholecystectomy and the Management of the Proximal Stump of the Cystic Duct: Use of Kangaroo Tendon and Spun Threads of Tendon as Substitutes for Catgut; Multiple Drilling of Fractures—An Old-Fashioned Operation Revised.

Dr. A. J. Ochsner: Fracture of Humerus; Ununited Fracture of the Humerus; Fracture of the Patella; Double Harelip and Cleft Palate.

Dr. Truman W. Brophy: Harelip.

Dr. Carl Beck: Multiple Papillomata of Bladder; Syphilis of the Stomach—Resection of Pylorus for Impermeable Luetic Stricture; Restoration of Cheek following Extensive Resection for Carcinoma.

Dr. Carl B. Davis: Plastic Repair of Deltoid Muscle; Recurrent Dislocation of the Patella.

Dr. Thomas J. Watkins: A Plastic Operation for Constriction at the Vaginal Orifice and for Vaginismus; Carcinoma of the Cervix Treated by Radium and Hysterectomy.

Dr. Arthur Dean Bevan: Appendicitis; Appendical Abscess; Carcinoma of the Cecum, Amputation at Middle of Thigh for Gas Gangrene; Abscess of the Lung; Congenital Pyloric Stenosis; Carcinoma of the Larynx.

Dr. Franklin B. McCarty: Fracture of the Carpal Scaphoid.

Dr. Victor L. Schrager: A Suggestion in the Technic of the Radical Operation for Carcinoma of the Breast; Routine Appendectomy Through Right Indirect Inguinal Hernia Sac in Afebrile Cases; Syphilis of the Liver Simulating Gall-Bladder Pathology.

Dr. Benjamin F. Davis: Winged Scapula—Serratus Magnus Palsy.

Dr. William Hessert: Ununited Fracture of Neck of Femur—Treatment by Bone Transplantation.

Dr. Edward L. Moorhead: Prolapse of Uterus in a Virgin Eighteen Years Old; Congenital Inguinal Hernia; Strangulated Inguinal Hernia Complicated by Acute Gangrenous Appendicitis; Infantilism.

Dr. G. L. McWhorter: Diagnosis of Fistula in Ano.

Dr. Daniel M. Eisendrath: Fractures of the Patella.

Dr. Gatewood: Strangulated Epigastric Hernia.

Dr. Emmet A. Printy: Postoperative Diphtheric Infection of a Hernia Wound.

Dr. Robert H. Herbst: Severe Hematuria—Excision of Malignant Tumor of Bladder; Prostatectomy for Hypertrophy of Prostate Gland; Extensive Stricture of the Urethra; Bilateral Colon Pyelitis with Cystitis; Vasotomy in a Case of Persistent Seminal Vesiculitis.

The reviewer calls special attention to Dr. Bevan's thirty-page article on Appendicitis; also to Drs. Ochsner's and Eisendrath's chapters on operation for fracture of the patella; both men recommending early mobilization and use of the leg (ten to sixteen days after operation), and one (Ochsner) not using any splint at all after operation.

The illustrations are, as usual, excellent.

Personal Identification. By HARRIS HAWTHORNE WILDER, Ph.D., and BERT WENTWORTH. Boston: Richard G. Badger—The Gorham Press. 1918.

Up to the present time the idea of positive methods of identification has been almost universally associated with criminals and finger prints. Such a system has proved an invaluable aid to the governments of the world in running down certain individuals. However, there are countless other cases where proof beyond doubt must be established that a person or a dead body is the one sought. The need is present in schools, hospitals, and more especially now, in time of war, when there is a great need of definitely identifying each soldier and sailor. This book incorporates all the known methods of personal identification, including the system of measurements of M. Bertillon, the famous system of finger prints devised by Sir Francis Galton and effectively put to use by Sir E. R. Henry of Scotland Yard, and introduces two new methods: (1) by the palms, and (2) by the soles. The treatment of these two methods is adapted for self-instruction. This volume is an attempt on the part of the authors, one a professor of zoology and the other a former police commissioner, to show what has been accomplished in the past and what the possibilities are for the future in this sort of work. As a scientific work it is a particularly interesting discussion of the variability of personal characteristics of the body. It is fascinating reading and contains marvelous examples of the exact workings of positive identification. The illustrations carry the reader from historical methods up to present-day methods, and the book itself is divided into two parts: Part I—Methods which furnish partial identification, and Part II—Methods which furnish absolute identification.

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CONSTITUTIONAL FOUNDATIONS OF PUBLIC HEALTH FUNCTIONS.

Ever since the adoption of the Constitution by the United States there has been a tendency for the transference of power from the states to the National Government. Of late years the assumption of leadership by the government in matters relating to the public health has been more pronounced, and with the formation of the National Department of Health will, no doubt, become even more so.

These powers have not been specifically delegated to the central government by the Constitution. The process of their gradual assumption is an interesting study, especially from the point of view of the gradual disuse and resulting atrophy of the once vigorous "States' Rights."

President Goodnow of Johns Hopkins University, addressing the Conference of State and Provincial Boards of Health last June, traced this process and showed by what authority the Federal Government had taken on these powers. The extent of power possessed by the National Government, he said, depended upon two important principles. These might be summarized by the statement that the National Government, although of enumerated powers, is supreme in the exercise of the powers enumerated.

No power over the public health is granted by the Constitution to the Federal Government. Power is granted, however, to make all laws necessary and proper for carrying into execution any of the powers vested by the Constitution in the Government of the United States or in any department or officer thereof. President Goodnow finds that there are two general clauses of the Constitution under the provisions of which the central government is enabled to attack problems relating to the general health. The first is the power to regulate commerce with foreign nations and among the several states. This power was at first interpreted very narrowly but as the states became less jealous of their rights it became amplified until it enabled the central government to put through successfully as radical a measure as the Pure Food and Drug Act. An attempt to stretch the power still further, as exemplified by the Child Labor Act, was judged unconstitutional by the Supreme Court, on the ground that the Act was an attempt to regulate methods of manufacture within a state, and that these were a matter for state and not for national regulation. In other words, the Acts of Congress based on the clause of "Regulating Commerce" must have something to do with interstate transportation.

The second great source of national power with regard to the public health is to be found in the power granted by the Constitution to Congress to "lay and collect taxes, duties, imposts and excises, to pay the debts and provide for the common defense and general welfare of the United States."

"The power to tax is the power to destroy." By prohibitive taxation Congress may make it practically impossible to manufacture certain articles. An example of this is the prohibitive tax on the manufacture of phosphorous matches. By this clause Congress has also given the power to appropriate money to "provide for the common defense and general welfare of the

United States." This justifies a large proportion of the activities of the National Health Service. It does not, however, authorize the United States Government to interfere with the sanitary work of the several states except by their consent.

There is no doubt but that these delegations of power to the central government are in line with the people's wishes. Public health is becoming more and more a matter of national and even of international concern. It is not unlikely that the next few years will see far greater steps in the assumption by the National Government of power over the health of the people.

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SAFE-GUARDING THE HEALTH OF STUDENTS.

THE man who graduated from one of our older universities in the days when rooms were heated only by dusty open fires, when the toilet facilities provided for the necessary, not for the aesthetic, and when no one ever told the undergraduate how often he should bathe, would be amazed at the plans for student hygiene which are now being carried out in many of our colleges and universities.

A good exposition of such a campaign for the health of students is given by Sundwall in the U. S. Public Health reports for November 7, 1919. The scheme so described provides that the health service be divided into three main divisions: (a) personal attention; (b) sanitation; (c) education. The division of personal attention is concerned with the physical examination of students, with the supervision of their exercise, and with the problem of keeping them in the best possible health. It aims to protect the physically sound student by the early detection of communicable disease, and by the quarantine of those having such diseases. It is concerned with the reclamation and reconstruction of physically defective individuals, and with the care and treatment of all students who are ill.

The division of sanitation, obviously, has charge of the students' environment. Such matters as the regulation of temperature and humidity of dormitories and the cleanliness of baths and toilets come within the jurisdiction of this department. These duties Sundwall would depute to an officer of the faculty residing in the dormitory over which he is to exercise supervision. Another suggestion is that rooming houses be rated according to a definite scale, so many points being allowed for ventilation, lighting, heating, cleanliness, and so forth.

This program is highly commendable, and will no doubt give the student many ideas as to hygiene which will prove of value in later life. The new conception of hygiene for students shows in many ways the influence of the era of mobilization and militarization through which we have just passed, and will, no doubt, for that reason, be accepted in a more kindly spirit by the "thoughtless sophomore."

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MEDICAL NOTES.

DRUG PRICE CHANGES.—The following report of drug price changes was issued on October 29: It is estimated that more than $3,000,000 worth of essential oils is tied up by the longshoremen's strike. Many products are becoming scarce. Oil of lemon, oil of cloves, oil of citronella, oil of orange and others are higher. Even the lifting of the strike embargo will not lower prices on these imported oils because of the many unfilled orders and the fact that the insurance charges which have accumulated must be paid by buyers eventually.

The drug market is also seriously affected by the dock strike, one of the largest manufacturers of quinine having a cargo of cinchona bark held up in New York harbor for weeks, with small prospect of its release for weeks to come. The available quinine is running short, and the situation will become serious if an epidemic of influenza starts. Many other crude drugs are extremely scarce owing to the strike embargo, and the trade is anticipating higher prices on this account.

Coal-tar intermediates are in good demand, especially stocks for spot delivery. Aniline oil is scarce and held in isolated lots. Very little business for 1920 delivery is being closed, owing to the uncertain conditions. The output of benzol is increasing. Logwood and hematine are higher. Colors are in demand, many important types being scarce. Victoria Blue B is very strong, and auramine single and double O are in short supply.

Orders for vegetable oils and animal oils are limited, but first hands are holding prices firm, second hands are offering material more freely and are shading prices in efforts to unload. Producers say stocks are not large, and with renewed buying demand they expect higher levels for many products. Linseed oil is lower for future delivery, and menhaden declined slightly.

Yellow Fever in Nicaragua.—A recent report states that as several cases of yellow fever have developed at Corinto, Nicaraugua, a quarantine has been placed on all steamers coming from there by Guatemala.

Red Cross Aid in Siberia.—At the request of Admiral Kolchak, the American Red Cross has undertaken to establish and administer quarantine stations along the Trans-Siberian Railroad in an effort to stamp out typhus, which is spreading at an alarming rate. Colonel Rudolph Palling Teusler, who is in charge of the Red Cross work in Siberia, has secured coöperation between the Russian civil and military authorities, the latter assuming the burden of maintaining not only proposed quarantine stations, but hospitals already established as well. Ten thousand beds have been made available in Russian hospitals by Colonel Teusler, in addition to nine hospitals with thirty-eight hundred beds under the management of the Red Cross.

Appointment of Dr. J. G. FitzGerald.—Dr. J. G. FitzGerald has been appointed professor of hygiene at the University of Toronto. He has been associate professor of hygiene in that institution, and is also director of the Connaught Antitoxin Laboratories. Dr. FitzGerald is to succeed Dr. John A. Amyst, who has been appointed deputy minister of health in the Federal Department of Health, Ottawa.

Lethargic Encephalitis.—A number of cases of the disease called by the name of lethargic encephalitis have been reported recently in different parts of the country. A *Public Health Report* which was issued in February has described the disease and mentioned the cases which have been observed. Attention was called to this malady in April, 1917, at a meeting of the Vienna Psychiatric Society, when Von Economo described a number of cases which had occurred in epidemic form. In May, 1918, the disease was discussed by the Paris Academy of Medicine, where the opinion was expressed that lethargic encephalitis is not a form of poliomyelitis. It is believed that the disease was observed several hundred years ago. There is evidence that it appeared in Italy and Hungary in 1890, in European countries and in the United States five years later, and in Vienna in the winter of 1916-17. The first case reported in England appeared in February, 1918, and was made notifiable in England and Wales. The disease continued until June, with a maximum weekly incidence of eighteen.

From what has been observed about lethargic encephalitis it appears to be an acute, infectious disease, probably due to a specific virus, finding entrance to the body through the nasopharynx, and attacking various sections of the nervous system. Little has been definitely concluded as yet from bacteriological study. Seven types have been differentiated by clinical observation. The majority of cases are characterized by a stupor lasting from two or three days to a number of weeks. The mortality from this disease is high, and convalescence often requires about six months. No specific treatment has been recommended.

Anthrax.—An investigation conducted by two members of the United States Public Health Service and reported in a recent issue of the *American Journal of Public Health* shows that this is an infection which should be given more serious attention. In 1916 there were reported 106 cases from nine states, and in 1917, 202 cases from fifteen states. There has been a mortality rate of thirty-three per cent. of the cases. In Massachusetts there were 54 cases with 11 deaths; in New York, 32 cases with 12 deaths; and in Pennsylvania, 25 cases with 11 deaths. Since manufacture has been greatly stimulated during the last year, the statistics for 1918 are awaited with interest.

The Massachusetts Medical Society.

PUBLIC HEALTH CONVOCATION.

The third Convocation on Public Health arranged by the Committee on Public Health of the Massachusetts Medical Society was held at Springfield, November 21 and 22 with the following program:

FRIDAY, NOVEMBER 21

8 P.M.

Opening Session

ADDRESSES OF WELCOME from *Dr. Enos H. Bigelow*, Chairman of the Committee on Public Health; *Dr. Alfred Worcester*, President of The Massachusetts Medical Society, and *His Honor, Arthur A. Adams*, Mayor of the City of Springfield.

THE HEALTH OF THE COMMONWEALTH. *His Excellency, Hon. Calvin Coolidge*, Governor of the Commonwealth.

BETTER HEALTH IN MASSACHUSETTS. *Dr. Eugene R. Kelley*, State Commissioner of Health.

THE PROGRAM OF THE INTERNATIONAL HEALTH BOARD. *Dr. Victor G. Heiser*, Director for the East, International Health Board.

SATURDAY, NOVEMBER 22.

MORNING

Session on Personal and School Hygiene.

10.05 PERSONAL HYGIENE THE BASIS OF HEALTH. *Professor W. T. Sedgwick*, Head of the Department of Biology and Public Health, Massachusetts Institute of Technology.

11.05. THE DENTAL CARE OF SCHOOL CHILDREN. *Dr. George H. Wright*. Lecturer on Dental Hygiene, Harvard Dental School.

12.05 ESSENTIALS OF SCHOOL HYGIENE. *Dr. Walter H. Brown*, Health Officer, Bridgeport, Conn.

SATURDAY, NOVEMBER 22

AFTERNOON

Session on Industrial Hygiene

2.05 INDUSTRIAL HEALTH. *Dr. Cecil K. Drinker*, Secretary of the Governing Committee on Industrial Hygiene, Harvard Medical School.

3.05 PUBLIC HEALTH NURSING IN AN INDUSTRIAL COMMUNITY. *Miss Mary Beard*, Director of the Boston Instructive District Nursing Association.

4.05 GOOD AIR AND THE HEALTH OF THE WORKER. *C. E. A. Winslow, D.P.H.*, Professor of Public Health, Yale University Medical School.

SATURDAY, NOVEMBER 22.

8 P.M.

Final Session.

THE ESSENTIALS OF AN ADEQUATE DIET. *Alice F. Blood, Ph.D.*, Head of the Department of Household Economics, Simmons College, Boston, Mass.

LESSONS FROM THE FRAMINGHAM HEALTH EXPERIMENT. *Dr. P. C. Bartlett*, Chief Medical Examiner, Community Health and Tuberculosis Demonstration, Framingham, Mass.

RURAL SANITATION IN THE NORTH AND SOUTH. *C. W. Stiles, M.D*, U. S. Public Health Service, Washington, D. C.

THE RELATION OF FEEBLEMINDEDNESS TO PUBLIC HEALTH. *Dr. Walter E. Fernald*, Superintendent, Massachusetts School for Feebleminded.

This was the first meeting of the sort to be held in the western part of the state and was attended with a high degree of enthusiasm. Public health workers and town and city officials from the Connecticut Valley district attended in large numbers. The special sessions on School and Industrial Hygiene were of particular value to people engaged in these fields of public health activity.

The list of speakers cited in the above program speaks for the quality of the addresses delivered. The general sessions on Friday and Saturday evenings were specially well attended and the whole affair was made extremely pleasant by the cordiality and enthusiasm of the medical profession and the public health workers in the Springfield district. The Committee on Public Health and the coöperating organizations are to be congratulated on its success. The members now serving on this committee are Dr. Enos H. Bigelow of Framingham Center, Dr. Roger I. Lee of Cambridge, Dr. E. F. Cody of New Bedford, Dr. Victor Safford of Jamaica Plain, and Dr. Annie Lee Hamilton of Boston.

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SOCIETY NOTICES.

NEW ENGLAND PEDIATRIC SOCIETY.—The forty-ninth meeting of the New England Pediatric Society will be held at the Boston Medical Library on Friday, Dec. 12, 1919, at 8.15 P.M.

PROGRAM.

1. Treasurer's report.
2. The report of the Council.
3. The following papers will be read:
    (*a*) The Fundamental Basis of Nutrition, Fritz B. Talbot, M.D., Boston.
    (*b*) The Work of a Nutrition Class (Illustrated by slides.), W. R. P. Emerson, M.D., Boston.
    (*c*) Bodily Mechanics and Nutrition, Lloyd T. Brown, M.D., Boston.
4. The election of officers.

WILLIAM E. LADD, M.D., *President*,
RICHARD M. SMITH, M.D., *Secretary*.

HAMPSHIRE COUNTY BRANCH OF THE MASSACHUSETTS MEDICAL SOCIETY.—The next meeting will be held at the Forbes Library, Northampton, on Thursday, Dec. 4, 1919, at 11.30 A.M. Dr. Joel E. Goldthwait of Boston, will talk on "Some of the Lessons Learned as a Result of the War Activities Which Should be of Value to the General Practitioner." It is especially desired that all members make an urgent effort to be present to hear Dr. Goldthwait, whose valuable military services are well recognized.

F. N. THOMAS, M.D., *Secretary*.

SUFFOLK DISTRICT MEDICAL SOCIETY.—A meeting of the Surgical Section was held on Friday evening, November 21, at the Medical Library. Dr. Edward L. Keyes, Jr., of New York, read a very interesting paper on "Prostatism."

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NOTICES.

THE CUTTER LECTURES ON PREVENTIVE MEDICINE, by T. M. Legge, M.D., D.P.H., His Majesty's Inspector of Factories and Lecturer on Factory Hygiene, University of Manchester, London, England, will be on the following subjects: Monday, December 8, "Twenty Years' Experience of the Notification of Industrial Diseases under the Workmen's Compensation Act;" Tuesday, December 9, "Medical Supervision in Factories;" Wednesday, December 10, "Industrial Diseases under the Workmen's Compensation Act." The lectures will be given at the Harvard Medical School amphitheatre, Building E, from 5 to 6 P.M.

These lectures are given annually under the terms of a bequest from John Clarence Cutter, whose will provided that the lectures so given should be styled the Cutter Lectures on Preventive Medicine, and that they should be delivered in Boston, and be free to the medical profession and the press.

All members of the classes in the Medical School, the medical profession, the press, and others interested are cordially invited to attend.